

**METHODS, COMPOSITIONS, AND GROWTH AND DIFFERENTIATION
FACTORS FOR INSULIN-PRODUCING CELLS**

Abstract of the Disclosure

A method of converting differentiated non-hormone producing pancreatic cells into differentiated hormone producing cells is disclosed. The method comprises two steps: first, culturing cells under conditions which convert differentiated non-hormone producing cells into stem cells; and second, culturing stem cells under conditions which provide for differentiating stem cells into hormone-producing cells. The invention defines growth and differentiation factors that are presented to the stem cells to result in their differentiation into hormone-producing cells, especially insulin-producing cells. The invention provides a new source of large quantities of hormone producing cells such as insulin-producing cells that are not currently available for therapeutic uses such as the treatment of diabetes.

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